GREEN PARK COMMUNITY PRIMARY SCHOOL

SCIENCE

CURRICULUM MAP

Inspiring curiosity • Developing knowledge • Shaping the future

OUR GOLDEN THREADS

PHYSICS

Understanding how the universe works through energy, forces, motion, light and sound.

BIOLOGY

Exploring living things, their structure, processes, evolution and how they interact with their environment.

CHEMISTRY

Investigating the properties of materials, how they change and the reactions that shape our world.

EARTH SCIENCE

Understanding Earth and beyond, including the planet, atmosphere, space and the systems that sustain life.

LEADERSHIP | ORGANISATION | RESILIENCE | INITIATIVE | COMMUNICATION | KINDNESS

Year 2 Science Medium Term plans

Year 2	**Materials** **Material Masters**	**Changing State – working scientifically** **Material Detectives: Changing Materials**	**Animals inc. humans** **Growing and Staying Healthy**	**Plants** **Plant Explorers**	**Habitats – living things** **Habitat Hunters**
Prior learning	• Can identify and name a range of everyday materials. • Can describe simple material properties. • Knows that objects are made from different materials. • Can compare and group materials.	• Can identify everyday materials. • Knows that materials have different properties. • Can compare materials using simple observations. • Can carry out simple investigations and record findings.	• Can identify common animals and group them. • Can identify the basic parts of the human body. • Knows the five senses and the body parts associated with them. • Can compare animals and humans.	• Can identify common plants and trees. • Can name the basic parts of a flowering plant and a tree. • Knows that plants grow and change over time. • Can observe and describe plants.	• Can identify common animals and plants. • Knows that plants and animals change throughout the seasons. • Can observe the natural world closely. • Can identify similarities and differences between living things.
Year 2	Topic: Everyday Materials Enquiry Question Which materials are best for different jobs?	Topic: Uses of Everyday Materials Enquiry Question How can materials change and how can we investigate those changes?	Topic: Animals Including Humans Enquiry Question How do animals and humans grow and stay healthy?	Topic: Plants Enquiry Question What do plants need to grow and survive?	Topic: Living Things and Their Habitats Enquiry Question How do living things depend on their habitats?
Explore 1	WALT: identify and compare the uses of everyday materials. Children: Explore a range of everyday objects.	WALT: identify materials that can change shape. Children: Explore a range of everyday materials. Investigate how materials can be changed.	WALT: understand that animals, including humans, have offspring which grow into adults. Children: • Explore different animals and their young.	WALT: identify the basic parts of a plant and understand that plants grow from seeds and bulbs. Children: • Explore a range of common plants.	WALT: explore and compare things that are living, dead and have never been alive. Children: • Explore a variety of objects and organisms. • Sort items into living, dead and never alive groups.

	Identify the materials they are made from. Discuss why particular materials have been chosen. Sort objects by material. Vocabulary: wood, plastic, metal, glass, brick, paper, cardboard	Sort materials according to whether they can change shape easily. Discuss observations. Vocabulary: material, shape, change, flexible, rigid	• Compare animal offspring with adult animals. • Discuss similarities and differences. • Sequence simple life cycles. Skills: • Observes and compares. • Identifies patterns. • Uses scientific vocabulary. Vocabulary: offspring, adult, baby, grow, life cycle	• Identify roots, stems, leaves and flowers. • Investigate seeds and bulbs. • Discuss how plants begin to grow. Skills: • Observes closely. • Identifies features. • Uses scientific vocabulary. Vocabulary: root, stem, leaf, flower, seed, bulb	• Discuss the characteristics of living things. • Use scientific vocabulary to explain choices. Skills: • Observes closely. • Identifies and classifies. • Uses scientific vocabulary. Vocabulary: living, dead, never alive, grow, reproduce, habitat
Explore 2	WALT: describe the properties of everyday materials. Children: Investigate different materials. Use their senses to describe properties. Compare materials. Record observations. Vocabulary: hard, soft, rough, smooth, shiny, dull, waterproof	WALT: investigate how materials respond to squashing, bending, twisting and stretching. Children: Explore different materials through practical activities. Squash, bend, twist and stretch materials safely. Compare how materials respond. Record observations. Vocabulary: squash, bend, twist, stretch, force	WALT: identify the basic needs of animals, including humans, for survival. Children: • Explore what living things need to survive. • Discuss food, water and air. • Compare the needs of different animals. • Sort needs and wants. Skills: • Observes. • Identifies patterns. • Uses evidence to answer questions. Vocabulary: survival, food, water, air, living	WALT: observe and describe how seeds and bulbs grow into mature plants. Children: • Explore the stages of plant growth. • Observe seeds and bulbs. • Sequence the plant life cycle. • Record changes over time. Skills: • Observes changes over time. • Identifies patterns. • Records findings. Vocabulary:	WALT: identify different habitats and explain how they meet the needs of living things. Children: • Explore a range of habitats. • Identify plants and animals found in different habitats. • Discuss how habitats provide food, water and shelter. • Compare different habitats. Skills: • Identifies habitats. • Compares environments. • Uses observations. Vocabulary: habitat, shelter, food, water, environment

				germination, shoot, root, growth, mature plant	
Investigate 1	WALT: investigate which materials are suitable for different purposes. Children: Explore a range of objects. Discuss why materials are used for particular purposes. Carry out simple suitability tests. Record findings. Vocabulary: suitable, unsuitable, property, purpose, material	WALT: compare which materials change shape most easily. Children: Make predictions. Test a range of materials. Observe and compare results. Record findings in simple tables. Vocabulary: predict, observe, compare, results, evidence	WALT: identify and label the basic parts of the human body and link them to the senses. Children: • Identify body parts. • Label diagrams. • Match senses to body parts. • Take part in sensory investigations. Skills: • Observes closely. • Identifies and labels. • Uses simple equipment. Vocabulary: sight, hearing, smell, taste, touch	WALT: find out why plants need water to grow. Children: • Set up a simple investigation. • Compare plants with and without water. • Observe and record changes. • Discuss findings. Skills: • Carries out simple tests. • Makes observations. • Records results. Vocabulary: water, healthy, growth, investigation, observe	WALT: identify and name plants and animals found in habitats and microhabitats. Children: • Explore the school grounds and local environment. • Identify plants and animals in different habitats. • Investigate microhabitats such as under logs, stones and leaf litter. • Record observations. Skills: • Observes closely. • Identifies and classifies. • Records findings. Vocabulary: microhabitat, woodland, pond, soil, leaf litter

Investigate 2	WALT: compare the suitability of different materials for particular uses. Children: Test materials for different purposes. Compare results. Explain findings using evidence. Discuss which materials work best. Vocabulary: compare, test, evidence, suitable, property	WALT: investigate how different forces affect materials. Children: Explore what happens when different forces are applied. Compare the effects of pushing, pulling, bending and twisting. Discuss why materials behave differently. Record observations. Vocabulary: force, push, pull, bend, twist	WALT: understand why humans need different types of food. Children: • Explore a range of foods. • Sort foods into groups. • Discuss healthy eating. • Investigate balanced meals. Skills: • Sorts and classifies. • Observes. • Uses evidence. Vocabulary: healthy, balanced diet, nutrition, food groups	WALT: find out how light and temperature affect plant growth. Children: • Compare plants grown in different conditions. • Observe changes over time. • Record findings. • Discuss why plants need suitable conditions. Skills: • Observes over time. • Compares results. • Uses evidence. Vocabulary: light, temperature, healthy, conditions, compare	WALT: describe how animals obtain their food from plants and other animals. Children: • Explore simple food chains. • Identify producers and consumers. • Create simple food chains. • Discuss how animals depend on one another. Skills: • Identifies patterns. • Uses evidence. • Communicates ideas. Vocabulary: food chain, producer, consumer, predator, prey
Investigate 3	WALT: investigate how recycling helps us use materials sustainably. Children: Explore recyclable materials. Sort materials into recyclable and non-recyclable groups. Discuss why recycling is important.	WALT: carry out a fair test and record findings. Children: Plan a simple investigation. Test how different materials change shape. Record results using charts and tables. Draw conclusions from evidence. Vocabulary:	WALT: understand the importance of exercise and hygiene. Children: • Investigate how exercise affects the body. • Discuss healthy habits. • Explore hygiene routines. • Record observations. Skills: • Observes changes. • Records findings.	WALT: investigate what happens when plants do not get what they need. Children: • Observe plants grown without water, light or warmth. • Compare healthy and unhealthy plants. • Record observations. • Explain findings using evidence.	WALT: investigate how microhabitats provide for the needs of living things. Children: • Observe a range of microhabitats. • Identify organisms living within them. • Discuss why organisms are suited to particular places. • Record findings using drawings and simple charts.

	Investigate how materials can be reused. Vocabulary: recycle, reuse, reduce, environment, waste	fair test, investigation, record, conclusion, evidence	• Answers questions using evidence. Vocabulary: exercise, hygiene, health, heartbeat, cleanliness	Skills: • Conducts comparative tests. • Records observations. • Uses evidence to answer questions. Vocabulary: healthy, unhealthy, survive, compare, evidence	Skills: • Observes closely. • Records findings. • Uses observations to answer questions. Vocabulary: microhabitat, suitable, conditions, survive, organism
Reflect 1	WALT: explain why different materials are used for different purposes. Children: Revisit material properties. Compare materials and their uses. Discuss investigation findings. Answer the enquiry question. Vocabulary: material, property, suitable, compare, purpose	WALT: explain how materials can change shape. Children: Revisit investigations. Compare results. Discuss patterns identified. Answer the enquiry question using evidence. Vocabulary: change, material, force, compare, evidence	WALT: explain how animals and humans grow and stay healthy. Children: • Revisit learning from the unit. • Compare life cycles. • Discuss healthy choices. • Answer the enquiry question. Skills: • Communicates findings. • Uses scientific vocabulary. • Applies knowledge. Vocabulary: offspring, adult, healthy, survival, growth	WALT: explain what plants need to grow and survive. Children: • Revisit plant growth investigations. • Discuss findings. • Compare different growing conditions. • Answer the enquiry question. Skills: • Communicates findings. • Uses scientific vocabulary. • Applies knowledge. Vocabulary: growth, germination, water, light, temperature	WALT: explain how living things depend on each other and their habitats. Children: • Revisit food chains and habitats. • Discuss how living things rely on one another. • Consider why habitats need protection. • Answer the enquiry question. Skills: • Communicates findings. • Uses scientific vocabulary. • Applies knowledge. Vocabulary: depend, habitat, food chain, protect, environment

Assessment	Enquiry Question Which materials are best for different jobs? Children will demonstrate understanding by: Naming a variety of everyday materials. Describing material properties. Explaining why materials are chosen for different purposes. Comparing materials. Using evidence from investigations.	Enquiry Question How can materials change and how can we investigate those changes? Children will demonstrate understanding by: Identifying materials that can change shape. Describing how forces affect materials. Carrying out simple comparative tests. Recording observations and results. Using evidence to answer questions.	Enquiry Question: How do animals and humans grow and stay healthy? Children will demonstrate understanding by: • Explaining that animals have offspring. • Describing basic survival needs. • Identifying body parts and senses. • Explaining healthy eating. • Describing the importance of exercise and hygiene.	Enquiry Question: What do plants need to grow and survive? Children will demonstrate understanding by: • Identifying the basic parts of plants. • Describing how seeds and bulbs grow. • Explaining why plants need water. • Explaining the importance of light and temperature. • Using observations to explain plant growth.	Enquiry Question: How do living things depend on their habitats? Children will demonstrate understanding by: • Identifying living, dead and never alive things. • Naming habitats and microhabitats. • Identifying plants and animals found in habitats. • Constructing simple food chains. • Explaining why habitats are important.
End Point	Children identify a range of everyday materials, describe their properties and explain why particular materials are used for different purposes. By the end of this unit, children will be able to identify a range of everyday materials and describe their properties. They will understand that	Children investigate how materials can be changed through squashing, bending, twisting and stretching and explain how different materials respond to forces. By the end of this unit, children will understand that some materials can be changed by squashing, bending, twisting and stretching. They will know that different materials respond differently to forces and will be able to use observations and	Children understand that animals and humans grow and change over time and can explain how living things stay healthy. Children can explain how animals and humans grow, identify what living things need to survive and describe how healthy lifestyles help humans stay healthy. Based on the progression in the existing plan.	Children understand how plants grow from seeds and bulbs and can explain the conditions needed for healthy plant growth. By the end of this unit, children will understand that plants grow from seeds and bulbs and change as they mature. They will know that plants need water, light and a suitable temperature to grow and stay healthy. Children will be able to use	Children understand that living things live in habitats suited to their needs and depend on other living things for survival. Children can identify a variety of habitats and microhabitats, explain how they provide for the needs of living things and describe how plants and animals depend on one another within food chains and habitats.

	different materials are suitable for different purposes because of their properties and will be able to explain their choices using evidence from investigations.	evidence from simple investigations to explain these changes.		observations from simple investigations to explain how different conditions affect plant growth and survival.	
Substantive Knowledge (What children need to remember)	Children will know: Objects are made from different materials. Materials have different properties. Some materials are more suitable than others for particular uses. The properties of a material affect how it can be used. Materials can be recycled and reused. Recycling helps reduce waste and protect the environment.	Children will know: Materials can change shape in different ways. Some materials are flexible and others are rigid. Forces such as squashing, bending, twisting and stretching can change materials. Different materials respond differently to the same force. Scientists investigate materials by observing and comparing changes. Evidence helps scientists answer questions.	Children will know: • Animals have offspring which grow into adults. • Living things need food, water and air. • Humans need a balanced diet. • Exercise helps keep us healthy. • Hygiene helps prevent illness.	Children will know: Plants grow from seeds and bulbs. Seeds and bulbs develop into mature plants. Plants have roots, stems, leaves and flowers. Roots absorb water from the soil. Stems support the plant and transport water. Leaves help plants make food using sunlight. Plants need water, light and a suitable temperature to grow and stay healthy. Plants grow and change over time. Different growing conditions affect how well plants survive.	Children will know: • Living things grow, move, reproduce and respond to their environment. • Habitats provide food, water, shelter and space. • Different plants and animals live in different habitats. • Microhabitats are small habitats within larger habitats. • Animals depend on plants and other animals for food. • Food chains show how energy moves between living things. • Habitats need protecting to support living things.

Disciplinary Knowledge (Thinking like a scientist)	Children will: Observe materials closely. Identify and classify materials. Compare materials and their properties. Carry out simple tests. Gather and record data. Use observations and evidence to answer questions. Communicate findings using scientific vocabulary.	Children will: Observe materials closely. Ask simple scientific questions. Make predictions. Carry out simple comparative tests. Gather and record data. Identify patterns in results. Use evidence to answer questions. Communicate findings using scientific vocabulary.	Children will: • Observe closely. • Ask simple questions. • Gather and record data. • Compare and classify. • Use observations to answer questions.	Children will: Observe plants closely using simple equipment. Identify and classify parts of plants. Observe and record changes over time. Ask simple scientific questions. Make predictions before investigations. Carry out simple comparative tests. Gather and record data using drawings, labels and simple tables. Use observations and evidence to answer questions. Communicate findings using scientific vocabulary.	Children will: • Observe closely. • Identify and classify. • Ask simple questions. • Gather and record data. • Use observations to answer questions. • Communicate findings using scientific vocabulary.
Adaptive Teaching	Support Real objects for hands-on exploration. Material sorting activities. Vocabulary mats with pictures. Structured investigation sheets. Adult support during investigations. Challenge	Support Hands-on exploration of materials. Visual prompts showing forces. Adult modelling of investigations. Structured recording sheets. Vocabulary mats with images. Challenge Design their own investigation question. Explain why a test is fair. Justify conclusions using evidence. Compare several materials independently.	Support • Picture prompts. • Vocabulary mats. • Adult-led discussion. • Practical activities. Challenge • Compare different animal life cycles. • Explain healthy choices. • Use scientific vocabulary independently.	Support Use real plants, seeds and bulbs for hands-on exploration. Provide labelled diagrams and vocabulary mats. Use visual prompts and sequencing cards for plant life cycles. Provide structured recording sheets.	Support • Habitat picture cards. • Vocabulary mats. • Adult-led outdoor investigations. • Sorting and matching activities. • Structured recording sheets. Challenge • Create more complex food chains. • Compare habitats independently.

	Explain why one material is more suitable than another. Use scientific vocabulary independently. Suggest alternative materials for products. Justify conclusions using evidence. Design their own suitability test.	Use scientific vocabulary accurately in explanations.		Model observations and scientific language. Adult support during investigations and discussions. Challenge Explain why investigations should be fair. Make and justify predictions using prior knowledge. Compare results from different investigations. Suggest reasons for differences in plant growth. Use scientific vocabulary independently in explanations. Design their own simple investigation question about plant growth.	• Explain why organisms are suited to specific habitats. • Use scientific vocabulary accurately and independently.
Assessment for Learning	Assessment for Learning Throughout the unit, teachers will assess understanding through: Material sorting activities. Practical investigations.	Assessment for Learning Throughout the unit, teachers will assess understanding through: Observation of practical investigations. Discussion and questioning. Prediction activities. Comparative testing. Recording tables and charts. Retrieval quizzes. End-of-unit reflection tasks.	Assessment for Learning • Discussion and questioning. • Labelling activities. • Sorting activities. • Observation tasks. • Retrieval quizzes. • End-of-unit reflection.	Assessment for Learning • Observation of plant growth over time. • Plant growth journals and diaries. • Labelling activities. • Discussion and questioning. • Comparative investigations. • Retrieval quizzes. • End-of-unit reflection activities.	Assessment for Learning • Habitat sorting activities. • Food chain construction tasks. • Outdoor observation records. • Discussion and questioning. • Retrieval quizzes. • End-of-unit reflection activities.

	Discussion and questioning. Observation of scientific enquiry skills. Retrieval quizzes. Recording sheets. End-of-unit reflection tasks.	Responses to the enquiry question: "How can materials change and how can we investigate those changes?"			
National Curriculum	Pupils should be taught to: Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	Pupils should be taught to: Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. Working Scientifically Pupils should be taught to: Ask simple questions and recognise that they can be answered in different ways. Observe closely using simple equipment. Perform simple tests. Identify and classify. Gather and record data to help answer questions. Use observations and ideas to suggest answers to questions.	Pupils should be taught to: • Notice that animals, including humans, have offspring which grow into adults. • Find out about and describe the basic needs of animals, including humans, for survival. • Describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene.	Pupils should be taught to: Observe and describe how seeds and bulbs grow into mature plants. Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	Pupils should be taught to: • Explore and compare the differences between things that are living, dead and things that have never been alive. • Identify that most living things live in habitats to which they are suited. • Identify and name a variety of plants and animals in their habitats, including microhabitats. • Describe how animals obtain their food from plants and other animals using the idea of a simple food chain. • Identify and name different sources of food.

WORKING SCIENTIFICALLY PROGRESSION

Developing scientific enquiry skills from curious explorers to confident scientists

EYFS

Explore and Notice

- Explore the world around them.
- Use their senses to make observations.
- Notice changes over time.
- Talk about what they have found out.

YEAR 1

Observe and Identify

- Observe closely using simple equipment.
- Identify and name what they see.
- Ask simple questions.
- Record observations in pictures and words.

YEAR 2

Compare and Classify

- Compare and group objects and materials.
- Look for similarities and differences.
- Use simple tests to help answer questions.
- Record results in simple charts and tables.

YEAR 3

Predict and Investigate

- Ask relevant questions.
- Make predictions based on prior knowledge.
- Plan and carry out simple tests.
- Record and present findings using tables and diagrams.

YEAR 4

Measure and Record

- Take accurate measurements using standard units.
- Use a range of equipment.
- Record results clearly using tables, graphs and diagrams.
- Identify patterns and relationships.

YEAR 5

Plan and Enquire

- Plan fair tests and comparative investigations.
- Identify variables and control fairly.
- Collect and analyse data.
- Draw conclusions based on evidence.

YEAR 6

Analyse and Evaluate

- Plan and carry out complex enquiries.
- Evaluate methods and make improvements.
- Analyse and interpret data confidently.
- Draw reasoned conclusions and explain why.

OUR WORKING SCIENTIFICALLY SKILLS

ASK QUESTIONS
Thinking of questions and deciding what to find out.

MAKE PREDICTIONS
Using what we already know to guess what might happen.

SET UP TESTS
Planning simple tests to find answers fairly.

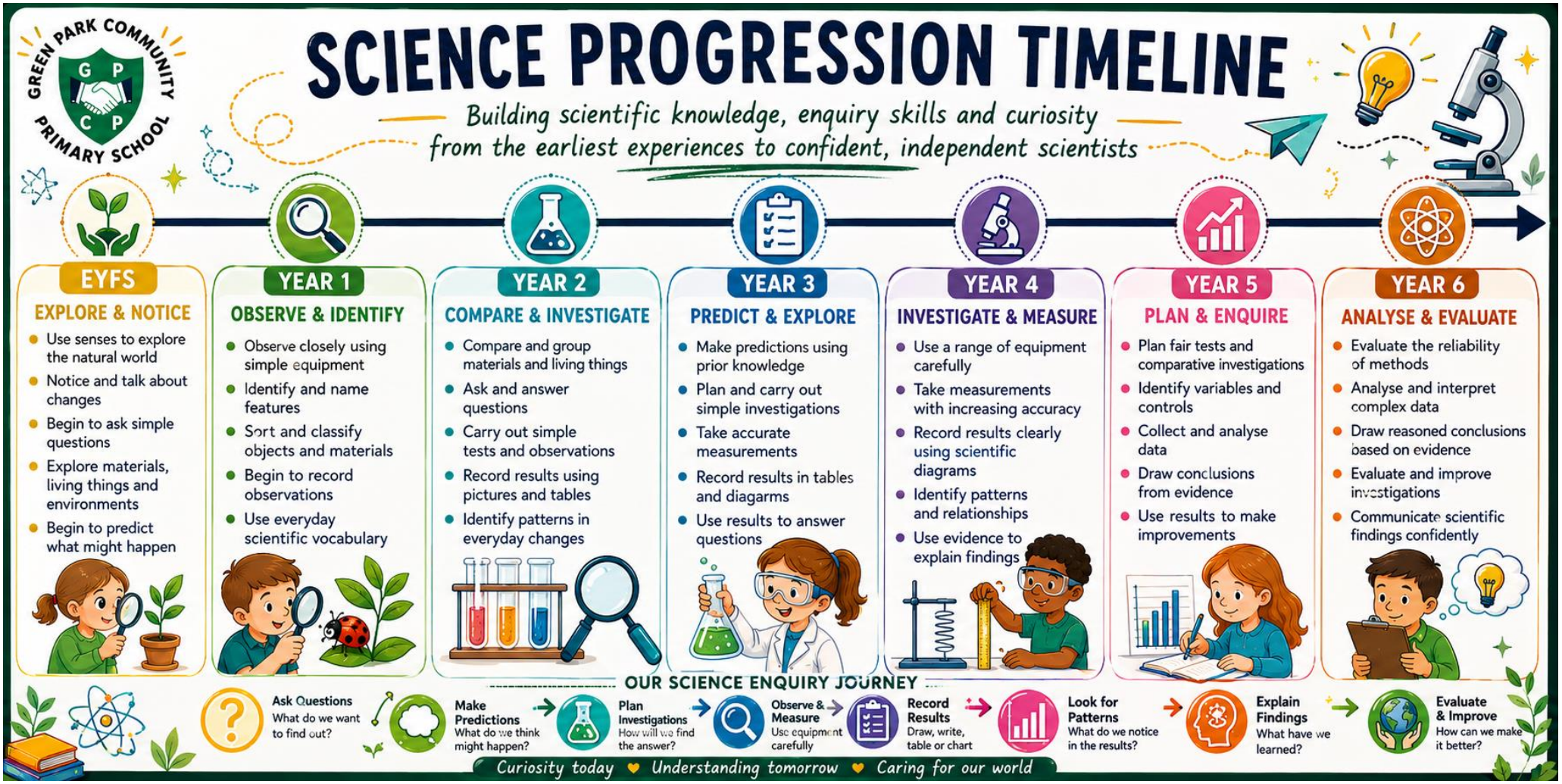
OBSERVE & MEASURE
Using our senses and equipment to make careful observations.

RECORD DATA
Writing down and showing what we find out.

ANALYSE
Looking for patterns and explaining our results.

EVALUATE
Deciding what worked well and how we can improve.

Curiosity today • Understanding tomorrow • Shaping the future


GREEN PARK COMMUNITY PRIMARY SCHOOL
G P C P
SCIENCE PROGRESSION TIMELINE
Building scientific knowledge, enquiry skills and curiosity from the earliest experiences to confident, independent scientists
EYFS
EXPLORE & NOTICE
Use senses to explore the natural world
Notice and talk about changes
Begin to ask simple questions
Explore materials, living things and environments
Begin to predict what might happen
YEAR 1
OBSERVE & IDENTIFY
Observe closely using simple equipment
Identify and name features
Sort and classify objects and materials
Begin to record observations
Use everyday scientific vocabulary
YEAR 2
COMPARE & INVESTIGATE
Compare and group materials and living things
Ask and answer questions
Carry out simple tests and observations
Record results using pictures and tables
Identify patterns in everyday changes
YEAR 3
PREDICT & EXPLORE
Make predictions using prior knowledge
Plan and carry out simple investigations
Take accurate measurements
Record results in tables and diagarms
Use results to answer questions
YEAR 4
INVESTIGATE & MEASURE
Use a range of equipment carefully
Take measurements with increasing accuracy
Record results clearly using scientific diagrams
Identify patterns and relationships
Use evidence to explain findings
YEAR 5
PLAN & ENQUIRE
Plan fair tests and comparative investigations
Identify variables and controls
Collect and analyse data
Draw conclusions from evidence
Use results to make improvements
YEAR 6
ANALYSE & EVALUATE
Evaluate the reliability of methods
Analyse and interpret complex data
Draw reasoned conclusions based on evidence
Evaluate and improve investigations
Communicate scientific findings confidently
OUR SCIENCE ENQUIRY JOURNEY
Ask Questions
What do we want to find out?
Make Predictions
What do we think might happen?
Plan Investigations
How will we find the answer?
Observe & Measure
Use equipment carefully
Record Results
Draw, write, table or chart
Look for Patterns
What do we notice in the results?
Explain Findings
What have we learned?
Evaluate & Improve
How can we make it better?
Curiosity today ♥ Understanding tomorrow ♥ Caring for our world

WORKING SCIENTIFICALLY PROGRESSION

Developing scientific enquiry skills from early explorers to confident scientists

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
ASKING QUESTIONS	• Ask simple questions about what they notice.	• Ask simple questions about what they observe.	• Ask questions about what they want to find out.	• Ask relevant questions to find out more.	• Ask scientific questions about how and why things happen.	• Ask questions that can be investigated scientifically.	• Formulate scientific questions and define problems clearly.
MAKING PREDICTIONS	• Begin to make guesses about what might happen.	• Make simple predictions based on what they already know.	• Make predictions using simple scientific knowledge.	• Make predictions and give reasons for them.	• Use scientific knowledge to make predictions.	• Make predictions using evidence and scientific understanding.	• Use a range of evidence to make predictions and justify them.
PLANNING INVESTIGATIONS	• Explore and find out about things.	• With support, decide how to find out about something.	• Decide how to find out and what to observe.	• Plan simple investigations to answer questions.	• Plan investigations with more than one step.	• Plan fair tests identifying variables to change and measure.	• Plan and refine investigations ensuring they are fair and valid.
OBSERVING & MEASURING	• Use their senses to make observations.	• Observe closely using simple equipment.	• Make careful observations and simple measurements.	• Take accurate measurements using a range of equipment.	• Take a range of measurements using standard units.	• Take precise measurements using appropriate equipment.	• Take precise and repeatable measurements with accuracy.
RECORDING DATA	• Talk about what they have found.	• Record observations in pictures, words or simple charts.	• Record data in simple tables and charts.	• Record results in tables, charts and simple diagrams.	• Record results clearly using tables, charts, diagrams and graphs.	• Choose the most appropriate way to record data.	• Record data systematically using a range of methods.
ANALYSING DATA	• Talk about what happened.	• Say what they found out.	• Look at results and say what they show.	• Look for patterns in results.	• Identify patterns and relationships.	• Compare and analyse results.	• Analyse results identifying trends and relationships.
CONCLUSION & EVALUATION	• Begin to understand what they found out.	• Say what they found out and how they found it out.	• Say what they found out and if it was what they thought.	• Draw simple conclusions.	• Draw conclusions using results and evidence.	• Draw conclusions explaining whether they were right.	• Evaluate methods and suggest improvements for the future.

OUR SCIENCE GOLDEN THREADS

WORKING SCIENTIFICALLY
Asking questions, investigating and evaluating to discover answers.

SCIENTIFIC KNOWLEDGE
Building knowledge and understanding of key scientific concepts.

UNDERSTANDING THE WORLD
Exploring the natural world and how science helps us make sense of it.

SUSTAINABILITY & RESPONSIBILITY
Making choices that help protect our planet and living things.

CURIOSITY & RESILIENCE
Being curious, persevering and learning from our experiences.

Curiosity today • Understanding tomorrow • Shaping the future

SCIENTIFIC ENQUIRY TYPES

Different types of enquiry help scientists answer questions about the world around us.

ENQUIRY TYPE	OBSERVING OVER TIME	COMPARATIVE TESTING	FAIR TESTING	IDENTIFYING & CLASSIFYING	PATTERN SEEKING	RESEARCH USING SECONDARY SOURCES
	Observing changes that happen over a period of time.	Comparing two or more things to see what is the same or different.	Changing one thing at a time to see what effect it has.	Sorting, grouping and naming things based on their features.	Looking for patterns and relationships in data or observations.	Finding out information from books, websites and other sources.
WHAT DOES IT INVOLVE?	Observing how a seed grows into a plant.	Comparing which material is best for an umbrella.	Testing which surface makes a toy car travel the furthest.	Classifying animals as mammals, birds or reptiles.	Recording daily weather and looking for patterns over a week.	Finding out about planets using books or the internet.
EXAMPLE PROGRESSION THROUGH THE YEARS	• EYFS – Notice changes in the natural world. • Y1 – Observe changes in plants and animals. • Y2 – Observe changes in materials over time. • Y3 – Observe seasonal changes. • Y4 – Observe patterns in sound or light. • Y5 – Observe changes in environments. • Y6 – Observe changes in the body or habitats.	• EYFS – Compare amounts and objects. • Y1 – Compare materials and animals. • Y2 – Compare how materials change. • Y3 – Compare the effects of forces. • Y4 – Compare the brightness of bulbs. • Y5 – Compare life cycles. • Y6 – Compare the effects of exercise.	• EYFS – Explore and talk about what they notice. • Y1 – Test simple ideas. • Y2 – Test which material is the strongest. • Y3 – Test how magnets work best. • Y4 – Test circuits and sound. • Y5 – Test materials and forces. • Y6 – Test how exercise affects heart rate.	• EYFS – Identify and name objects and materials. • Y1 – Identify animals and plants. • Y2 – Classify materials and living things. • Y3 – Classify rocks and plants. • Y4 – Classify living things in groups. • Y5 – Use keys to classify living things. • Y6 – Classify using scientific keys.	• EYFS – Notice patterns in the world. • Y1 – Notice patterns in weather and seasons. • Y2 – Look for patterns in data. • Y3 – Identify patterns in results. • Y4 – Look for patterns in sound and light. • Y5 – Identify patterns in habitats. • Y6 – Look for trends in data and results.	• EYFS – Listen to stories and talk about facts. • Y1 – Find simple information. • Y2 – Use books to find facts. • Y3 – Research using simple sources. • Y4 – Use sources to answer questions. • Y5 – Use multiple sources to research. • Y6 – Research and use evidence.

WHY IT MATTERS *Scientists use these enquiry types every day to explore, discover and understand the world. By practising them, we become curious, confident and capable scientists!*

Be curious · Ask questions · Test ideas · Find patterns · Share findings · Understand our world

Remember: Good scientists use more than one type of enquiry!

Curiosity today • Understanding tomorrow • Shaping the future

SCIENCE VOCABULARY PROGRESSION

Building scientific language step by step

THEME	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
LIVING THINGS	• animal • plant • grow • life • healthy	• mammal • bird • fish • reptile • offspring • body	• survive • baby • adult • food • senses • exercise	• skeleton • muscles • nutrition • herbivore • carnivore • omnivore	• teeth • digestion • food chain • producer • consumer • habitat	• life cycle • reproduction • metamorphosis • puberty • organ • function	• circulatory system • vascular • inheritance • evolution • adaptation • species
PHYSICAL PROCESSES	• push • pull • move • fast • slow	• light • dark • sound • loud • quiet	• change • float • sink • heat • cold	• force • magnet • attract • repel • friction	• vibration • volume • pitch • electricity • circuit	• gravity • air resistance • water resistance • mechanism • mechanical	• current • resistance • voltage • component • symbol
MATERIALS	• material • hard • soft • rough • smooth	• wood • plastic • metal • glass • waterproof	• object • material • squash • bend • twist	• opaque • transparent • absorbent • magnetic • non-magnetic	• solid • liquid • gas • melting • freezing	• dissolve • solution • mixture • separate • thermal conductor	• irreversible • reversible • conductor • insulator • property
EARTH & SPACE	• weather • sun • rain • wind • season	• spring • summer • autumn • winter • day • night	• hot • cold • cloudy • storm • rainbow	• sun • moon • star • planet • weather	• planet • orbit • rotation • shadow • eclipse	• solar system • Earth • Moon • Sun • orbit	• galaxy • universe • axis • time zone • latitude/longitude
WORKING SCIENTIFICALLY	• observe • notice • look • talk • question	• observe • identify • compare • sort • record	• compare • test • predict • measure • results	• investigate • record • evidence • pattern • conclusion	• measure • data • table • graph • explain	• fair test • variable • accuracy • conclusion • evaluate	• reliability • valid • hypothesis • analyse • evaluate

OUR SCIENCE GOLDEN THREADS

WORKING SCIENTIFICALLY
Asking questions, investigating, observing, measuring, recording and evaluating.

SCIENTIFIC KNOWLEDGE
Building knowledge and understanding of key scientific concepts.

UNDERSTANDING THE WORLD
Exploring the world around us and how science helps us make sense of it.

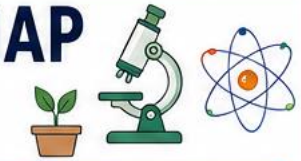
SUSTAINABILITY & RESPONSIBILITY
Making choices that help protect our planet and living things.

CURIOSITY & RESILIENCE
Being curious, persevering and learning from our experiences.

Curiosity today • Understanding tomorrow • Shaping the future

SCIENCE NATIONAL CURRICULUM COVERAGE MAP

Building scientific knowledge and skills across the primary years



OUR AIM

To ensure all pupils develop the scientific knowledge and working scientifically skills they need to understand the world and make a positive impact on the future.

NATIONAL CURRICULUM STRANDS

	EYFS (Understanding the World)	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
BIOLOCS (Living things and their habitats)	• Explore the natural world around them. • Know some similarities and differences between living things. • Explore how things work. • Use all their senses in hands-on exploration.	• Identify and name a variety of common animals. • Identify and name common plants. • Identify, name, draw and label basic plant parts. • Distinguish between an object and the material from which it is made. • Describe the simple physical properties of everyday materials.	• Explore and compare the differences between things that are living, dead, and things that have never been alive. • Identify that most living things live in habitats. • Describe how animals obtain their food. • Describe how plants grow and stay healthy. • Identify and compare the suitability of a variety of everyday materials. • Find out how the shapes of solid objects can be changed.	• Identify and describe functions of plant parts. • Explore requirements of plants for life and growth. • Describe life cycles of plants and animals. • Describe the importance of nutrition for humans and animals. • Describe the simple functions of the basic parts of the digestive system. • Compare how things move on different surfaces. • Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance. • Observe how magnets attract or repel. • Describe the effects of friction.	• Recognise that living things can be grouped in a variety of ways. • Explore and use classification keys. • Recognise that environments can change and pose dangers. • Describe the simple functions of the basic parts of the digestive system. • Identify different types of teeth in humans. • Identify common appliances that run on electricity. • Construct a simple electrical circuit and identify components. • Recognise that sound is produced by vibrations. • Identify how sounds travel. • Compare and group materials.	• Describe the life process of reproduction in some plants and animals. • Describe the changes as humans develop to old age. • Explain that unsupported objects fall towards the Earth because of gravity. • Identify the effects of air and water resistance. • Describe the movement of the moon relative to the Earth.	• Describe the circulatory system. • Describe the impact of diet, exercise, drugs and lifestyle. • Describe the ways in which nutrients and water are transported. • Describe how living things are classified. • Understand evolution and inheritance. • Associate the brightness of a lamp or volume of a buzzer with the number and voltage of cells used in the circuit. • Explain how light travels. • Explain how we see objects.
CHEMISTRY (Materials)	• Explore a variety of materials, tools and techniques.	• Identify and name a variety of everyday materials.	• Describe how the shape of solid objects can be changed by squashing, bending, twisting and stretching.	• Compare and group together different kinds of rocks. • Observe and compare soils. • Describe simple properties of rocks and soils.	• Compare and group materials. • Investigate states of matter. • Observe that some materials change state.	• Compare and group materials based on their properties. • Understand how materials dissolve to form solutions. • Separate mixtures.	• Know that some materials will dissolve in liquid to form a solution. • Use knowledge of solubility to separate mixtures.
EARTH & SPACE (Earth and space)	• Talk about the features of their own environment.	• Observe changes across the four seasons. • Observe and describe weather associated with seasons.	• Observe changes across the four seasons. • Observe and describe different types of weather.	• Describe the movement of the Earth, and other planets, relative to the Sun.	• Compare and group various rocks based on appearance. • Explore fossils.	• Describe the movement of the Earth and other planets. • Describe the movement of the Moon relative to Earth.	• Describe the movement of the Earth and other planets relative to the Sun. • Describe the Sun, Earth and Moon.

WORKING SCIENTIFICALLY (Throughout all strands)

Explore & notice → *Observe & identify* → *Ask & compare* → *Investigate & record* → *Measure & analyse* → *Plan & evaluate* → *Evaluate & explain*

OUR SCIENCE GOLDEN THREADS

COVERAGE STATEMENT
This map shows when key National Curriculum objectives are taught or revisited. Learning is built upon progressively each year to deepen knowledge and strengthen skills.

WORKING SCIENTIFICALLY
Asking questions, investigating, observing, measuring and evaluating.

SCIENTIFIC KNOWLEDGE
Building and connecting key scientific concepts.

UNDERSTANDING THE WORLD
Exploring the natural world and how science helps us.

SUSTAINABILITY & RESPONSIBILITY
Making choices that protect our planet and living things.

CURIOSITY & RESILIENCE
Being curious, persevering and never giving up.

WHY IT MATTERS
A strong science education inspires curiosity, builds understanding and prepares children to be informed, responsible citizens.